

Eman Abdullah Alghamdi

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📍 Riyadh, Saudi Arabia 13311-7642

EDUCATION

Doctor of Philosophy (Physics)

2014-2019

Physics and Astronomy Department, Cardiff University, Cardiff, United Kingdom

*Title of my PhD thesis: **Nanostructured materials as Potential photo catalysts for water treatment.***

Master of Science (Bio-photonics)

2012-2014

Physics and Astronomy Department, Cardiff University, Cardiff, United Kingdom

*Title of my M.Sc. thesis: **Raman Micro-Spectroscopy as a Method to Image Lipids in Biological Systems***

Bachelor of Science (Physics)

2003

Physics and Astronomy Department, King Abdulaziz University, Jeddah, Saudi Arabia

WORK EXPERIENCE

Vice Chairman of physics and Astronomy department

2021-present

Physics and Astronomy Department, College of Science, King Saud University, Riyadh, Saudi Arabia

Director of the Central Laboratory

2020-2021

College of Science, King Saud University, Riyadh, Saudi Arabia

Assistant Professor

2019-present

Physics and Astronomy Department, College of Science, King Saud University, Riyadh, Saudi Arabia

Demonstrator

2010-2019

Physics and Astronomy Department, College of Science, King Saud University, Riyadh, Saudi Arabia

High School Principal

2008-2010

Kingdom school, Riyadh, Saudi Arabia

Assistant Principal of High School

2006-2008

Kingdom school, Riyadh, Saudi Arabia

Physics Teacher

2003-2006

Kingdom school, Riyadh, Saudi Arabia

COMMITTEE MEMBERSHIPS

- Dean's Award Secretariat for Community Service (Member) 2023–present
College of Science, King Saud University, Riyadh, Saudi Arabia
- Strategic Partnerships Committee - Laboratory Unit (Member) 2023–present
College of Science, King Saud University, Riyadh, Kingdom of Saudi Arabia
- Renewable Energy Council Program (Member) 2023–present
College of Science, King Saud University, Riyadh, Kingdom of Saudi Arabia
- Steering Committee in female section(Coordinator) 2021– present
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- The Recruitment Committee in female section (Member) 2021– present
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- The Scholarship Committee in female section (Member) 2023– present
College of Science, King Saud University, Riyadh, Saudi Arabia
- The Public Relations & Community Partnership Committee in female section (Member) 2021– present
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- Organizing Committee of the International Scientific Exhibition (Member) 2021–2022
College of Science, King Saud University, Riyadh, Saudi Arabia
- The Distinguished and Talented Students Care Committee (Member) 2020–2021
Deanship of Student Affairs, King Saud University, Riyadh, Saudi Arabia
- Central Laboratory Committee (Coordinator) 2020–2021
College of Science, King Saud University, Riyadh, Saudi Arabia
- Laboratory and Safety Committee (Coordinator) 2020–2021
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- Postgraduate Academic Accreditation Committee (Coordinator) 2020–2021
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- Examination monitoring Committee (Coordinator) 2020–2021
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- Scholarship Committee (Member) 2019–2021
College of Science, King Saud University, Riyadh, Saudi Arabia
- Teaching Assistants and Scholarships Committee (Member) 2019–2021
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- A committee to Prepare the Returnees from the Scholarship (Member) 2019–2020
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia
- Academic Accreditation Committee (Coordinator) 2019–2020
Physics and Astronomy Department, King Saud University, Riyadh, Saudi Arabia

SUPERVISION UNDERGRADUATE STUDENTS

- Student name: Sarah Hazem Al-Qahtani
Research title: The calcination temperature impact on anatase to rutile phase transformation in TiO₂ nanoparticles using spin coating method
- Student name: Anwar Salem Al-Rashidi
Research title: Seawater desalination and treatment methods
- Student name: Wijdan Ali Al-Qarni
Research title: Measure and monitor temperature and humidity of green rooms using MYDAQ and LABVIEW software
- Student name: Razan Shalhoub Al-Shalhoub
Research title: Preparation of ZnO nanoparticles and reduced graphene oxide nanocomposite with enhanced optical properties
- Student name: Noura Al-Muhaizi
Research title: Effect of laser on the optical band gap of Graphene Oxide
- Student name: Noura Adel Al-Sulaimani
Research title: Effect of doping on the bandgap of graphene oxide
- Student name: Rama Al-Zeer
Research title: Fabrication and characterization of dye-sensitized solar cells using organic materials

SUPERVISION GRADUATE STUDENTS

- Supervising as main supervisor the master's thesis of the student: Dalal Al-Shammari
Research title: A Study on Detecting and Locating Improvised Explosive Devices
Executive master's Program in Pure Forensic Science
- Supervising as main supervisor the master's thesis of the student: Ibtisam Saeed Al-Maliki
Research title: Effect of Chloropropylamine Hydrochloride Incorporation on the Structural and Optical Properties of formamminium lead iodide Perovskite compound.
- Supervising as main supervisor the master's thesis of the student: Hanadi Saeed Al-Harbi
Research title: Optimization of the efficiency of dye-sensitized solar cells by using ZnO nanostructures/graphene nanocomposites.
- Supervising as assistant supervisor the master's thesis of the student: Rawabi Al-Madhem
Research title: Passivation of Methyllummonium lead iodide perovskite compound using Zinc chloride.

CONFERENCES AND POSTER PRESENTATIONS

- Women in the Aviation and Space Industry Conference
Riyadh International Convention and Exhibition Centre, December 19, 2023
- LEAP Conference 2023
Riyadh Front Exhibitions and Convention Centre, February 6-9, 2023
- International Science Conference and Exhibition ICES 2023
King Saud University, Riyadh, Kingdom of Saudi Arabia, February 6-8, 2023
- Academic Leadership Forum (First) - Developing effective academic leadership.
InterContinental Hotel, Riyadh, Saudi Arabia, November 6-7, 2022.
- Sustainable Partnerships Conference
The Ritz-Carlton Hotel - Riyadh, Kingdom of Saudi Arabia, November 23-24, 2022 AD
- AAAFM-UCLA international Conference on Advances in Functional Materials 2021
Los Angeles, USA 18-20 August, 2021
M. Aslam Manthrammel, A. Fatehmulla, **Eman A Alghamdi**, A. M. Al-Dhafiri
“Physical Properties of Nano-crystalline TiO₂ thin films prepared by Thermal Evaporation”
- The Ninth Annual Saudi Student Conference, Birmingham, UK, (13-14 February, 2016).
E. Alghamdi, C. Hodges, and S. A. Lynch,
“Nanostructured Materials as Potential Photocatalysts for Water Treatment”
- PHOTON16 International Conference, Leeds, UK, 5-8 SEP 2016.
E. Alghamdi, J. Mabin, C. Hodges, S. Freakley, S. A. Lynch,
“Visible and Infrared Spectroscopy of Photocatalytic Reactions for Water Treatment”
- 41st International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2016), Copenhagen 2016.
E. Alghamdi, J. Mabin, C. Hodges, S. Freakley, S. A. Lynch,
“Monitoring the Photocatalytic Degradation of Water-based Organic Pollutants by FT-IR Spectroscopy in Real-time”
- "Second Symposium for Secondary Education", *Riyadh, Saudi Arabia*, 15-17/6/1431 H
- "First Symposium for Secondary Education", *Riyadh, Saudi Arabia*, 22-24/1/1430 H

WORKSHOPS

- G20- CCE Technology & Innovation Workshop- 4 days- Riyadh, 1-2 and 8-9 March 2020
- "Student Activity in Secondary Education" workshop -First Symposium for Secondary Education", 1428 H
- "Students Registering in Course System" workshop First Symposium of Secondary Education",1428 H
- "Citizenship" project, held in King Faisal Training Center, 1-5/11/1426 H
- "Teaching Creative Thinking in School Curriculum", held in Educational Supervising Office, 5-9/7/1425 H
- "Educational & Informational Techniques in Sciences & Math", Kingdom School in cooperation with the British Council & Educational, 26-30/3/1425 H
- Preparing & performing the workshop of "Physics in Elementary / Intermediate Grades Sciences", lasting for three sequent days, attended by Physics & Sciences teachers from all Riyadh schools & Educational supervising Office supervisors & guiders, 1424 H

TRAINING COURSES

- 2023: PERMA for functional well-being, 4 hours, KSU, Riyadh
- 2023: Evaluating students using the Rubrics system, 4 hours, KSU, Riyadh
- 2023: Basics of academic leadership, 4 hours, KSU, Riyadh
- 2023: Understanding and leading others, 4 hours, KSU, Riyadh
- 2023: Administrative empowerment, 4 hours, KSU, Riyadh
- 2023: Administrative decision making, 4 hours, KSU, Riyadh
- 2023: Digital leadership, 4 hours, KSU, Riyadh
- 2023: Building and managing work teams, 4 hours, KSU, Riyadh
- 2023: Basics of international cooperation in research, 4 hours, KSU, Riyadh
- 2022: Curriculum design and construction, 10 hours, KSU, Riyadh.
- 2022: Effective university teaching, 10 hours, KSU, Riyadh
- 2022: Evaluation of learning outcomes and electronic tests, 10 hours, KSU, Riyadh
- 2022: Using modern technologies in teaching, 4 hours, KSU, Riyadh
- 2022: Micro-teaching and Peer Consulting, 4 hours, KSU, Riyadh
- 2021: Assessing student performance in online learning, 4 hours, KSU, Riyadh
- 2020: Assessing student performance in online learning- Scientific and Health Faculties, KSU, Riyadh
- 2020: Using artificial intelligence in making exam questions - 2 hours, KSU, Riyadh - zoom
- 2019: Introduction to Programming (ETC37)-4 hours, KSU, Riyadh – zoom

- 2019: Video conferencing system - Polycom, KSU, Riyadh – zoom
- 2019: Comsol- 3 days- Physics and Astronomy department, KSU, Riyadh
- 2017: Latex: High-quality typesetting system - Cardiff University, UK
- 2016: Python - Cardiff University
- 2015: Personal Effectiveness – 5 sessions - Cardiff University, UK
- 2015: Leadership - 5 sessions - Cardiff University, UK
- 2015: Working Safely – Health and safety -Cardiff University, UK
- 2014: Writing a Literature Review (Sciences) - Cardiff University, UK
- 2014: Keeping Your Research Up to Date (Social Sciences) - Cardiff University, UK
- 28/3/1431 H: "Supervising Leader", Kingdom School, Riyadh
- 1427 H: "Thinking Skills & Six Hats", Kingdom School, Riyadh
- 1427 H: "Cort" courses, Kingdom School, Riyadh
- 13/3/1427 H: "Art of Dealing with Others", given by Dr. Abdulrahman Al-Ashmawi, Educational Colleges – Scientific Division, Riyadh
- 27-28/2/1427 H: "Effective managing for Committees & Rooms", given by Dr. Sawsan, Educational Colleges – Scientific Division, Riyadh
- 1426 H: "Assessment in Courses System", Educational Ministry, Riyadh
- 1426 H: "Cooperative Education + Web Quest" courses, Kingdom School, Riyadh
- 1426 H: "Learning Difficulties – Behavior Skills", Kingdom School, Riyadh
- 1424 H: "Behavior Discipline & Time Management", Kingdom School, Riyadh
- 1424 H: "How to Teach Physics by Games Using Lego", Al-Rowad School, Riyadh

COMMUNITY SERVICE

- Participation in judging the standards of the physics major - the National Center for Academic Accreditation and Evaluation 2024.
- Supervising an innovation by four female students who are members of the Student Municipal Council in the city of Dammam, affiliated with the Eastern Province Education Department. Their project was presented to the committee in the council and was awarded first place at the level of the Eastern Province 2023-2024.
- Participate in writing professional exam questions – National Center for Academic Accreditation and Evaluation 2023.
- Supervising two innovations by master's student Ebtisam Saeed Al-Maliki 2022-2023.
- Providing an introductory lecture in the Department of Physics and Astronomy for female secondary school students in a number of schools in 2022.

- Preparing and implementing the “Be a Physicist” initiative and the accompanying exhibition to educate high school students (there are 86 schools) and joint first-year students about the importance of the physics major and its future in our country for the year 2021.
- Participation in following up on the students of the apprenticeship path (Latifa Othman Al-Dairim - 439200821), 2020-2021.
- Participate in preparing a booklet and a general introductory video for new male and female colleagues about the available capabilities and the many services that the university provides annually to support new faculty members, 2020.
- Participation in reviewing a scientific paper (Preparation and characterization of doped SiO₂ nanomaterials as an effective photocatalyst under visible light), Journal of the Saudi Chemical Society, 2020.
- Giving a lecture on nanoscience to female students of the College of Science entitled (Nanotechnology is the wonder of the new world) in coordination with the King Abdullah Institute for Nanotechnology and female students of the Nanotechnology Club 2019

AWARD

- Dean of the College of Science Award for the distinguished female dean in the departments of the College of Women's Sciences at King Saud University for the year 2021

LANGUAGES SKILLS

- ARABIC: NATIVE
- ENGLISH: VERY GOOD

PUBLISHED WORKS

Publication link:

https://scholar.google.com/citations?hl=en&user=Fb3ZW9wAAAAJ&view_op=list_works&sortby=pubdate

<https://orcid.org/my-orcid?orcid=0000-0002-9055-1943>

- **Electronic, optical, and thermoelectric characteristics of (Ae)_xFBiS₂ (Ae=Sr, Ba, and x=1.7) layered materials useful in optical modulator devices**
W. Khan; A.K. Kushwaha; R. Al-Amer; Nadyah Alanazi; H.R. Alqahtani; Samah Al-Qaisi; Muhammad ;Faizan; Bakhtiar Ul Haq; A. Laref; Eman A. Alghamdi et al.
Journal of Molecular Graphics and Modelling, Volume 129, June 2024, 108729
- **Adjusting the gas detection characteristics of NiFe₂O₄ spinel ferrite nanoparticles through the introduction of Zn doping**
Eman A. Alghamdi; Refka Sai
Results in Physics, Volume 59, April 2024, 107549

- **Augmenting the band gap of iron diselenide pyrite via ruthenium alloy integration**
Eman A. Alghamdi; Refka Sai
Heliyon, VOLUME 10, ISSUE 4, E25965, FEBRUARY 29, 2024
- **Fast switching capability and efficient magneto-electric coupling mediated by tunable ferroelectricity and magnetization in tri-phase composites for ultra-sensitive devices**
Umair Ali; Muhammad Ahmed Khan; Muhammad Mehak; Muhammad Tamoor Ansar; Shahid M. Ramay; Eman A. Alghamdi; Mohammed Shahabuddin; Shahid Atiq
Journal of Alloys and Compounds, Volume 970, 5 January 2024, 172536
- **A review on recent advances in covalent organic frameworks-based membranes: Synthesis, modification, and applications in liquid phase separation**
Sara Hameed; Akhtar Hayat; Eman A. Alghamdi; Nargis Bano; Farhat Jubeen; Abdul Ala Khurram
Journal of Science: Advanced Materials and Devices, Volume 8, Issue 4, December 2023, 100632
- **The effect of non-metals (O, F) dopant on the electronic structure, Dirac cone, and optical characteristics of graphene sheets applicable for gas sensing**
M. Alsagri; A. Laref; Bakhtiar. Ul Haq; H.R. AlQahtani; Fridolin Tchangnwa Nya; Mohammed El Amine Monir; Shahariar Chowdhury; Eman. A. Alghamdi; H.M. Huang; J.T. Yang et al.
Journal of Molecular Structure, Volume 1299, 5 March 2024, 137102
- **Impact of alloying iron pyrite by ruthenium on its band gap values and its insight to photovoltaic performance**
Eman A. Alghamdi; Refka Sai
Heliyon, VOLUME 9, ISSUE 10, E20270, OCTOBER 2023
- **A new study of the optical and structural characterization properties of p-type ZnS₂ pyrite with an application in solar energy**
Refka Sai; Eman A Alghamdi; Rasha A Abu Mousa; Amal Faleh Alanazi
Materials Research Express, Volume 10, Number 7, (2023)
- **Study of epsilon-near-zero response in Al substituted titanium oxynitride thin films using computational and experimental investigations**
Maria Khalil; Aneeqa Bashir; Eman A. Alghamdi; Abubaker A. Siddig; Shahid M. Ramay; Murtaza Saleem
Materials Science and Engineering: B, Volume 291, May 2023, 116369
- **Nanoscale Engineering of Structurally Stable Nd-Substituted LaCoO₃ as An Electrode Material for Supercapacitors**
Humna Asad; Hamad Ali; Ghulam Ali; Muhammad Ansar; Shahid M. Ramay; Eman A. Alghamdi; Shahid Atiq, ECS Journal of Solid-State Science and Technology, Volume 12, Number 4,(2023)
- **First-principles assessments of the electronic, and magneto-optical characteristics of Fe–Mn co-doped anatase TiO₂ for photo-catalysis applications**
A.K. Kushwaha; W. Khan; H.R. AlQahtani; A. Laref; Mohammed El Amine Monir; Fridolin Tchangnwa Nya; Shahariar Chowdhury; Eman A. Alghamdi; H.M. Huang; Y.C. Xiong et al.
Solid State Communications, Volume 360, 1 February 2023, 115059
- **Impact of zinc structural on the photovoltaic Properties of iron Pyrite**
Refka Sai; Ihab Shawish; Muaffaq Nofal; Eman A. Alghamdi
Heliyon, VOLUME 9, ISSUE 2, E13248, FEBRUARY 2023

- **The carriers doping effect on electronic and optical behaviors of newly layered Sr1- xHfxFBiS2 alloying materials for light-modulator devices**
R. Al-Amer; W. Khan; A. Laref; H.R. Alqahtani; G. Murtaza; Q. Mahmood; Fridolin Tchangnwa Nya; Shahariar Chowdhury; Mohammed El Amine Monir; Eman A. Alghamdi et al.
Journal of Physics and Chemistry of Solids, Volume 173, February 2023, 111097
- **Strain induced electromagnetic coupling in tri-phase multiferroic composites $0.8[(1-x)\text{Fe}_2\text{O}_3-x\text{PbZrO}_3]+0.2\text{Cr}_2\text{O}_3$ for multistate devices**
M. Zahid; M. Younis; T.A. Khan; M. Ahmad; Abdul Quader; G.M. Mustafa; Eman A. Alghamdi; S.M. Ramay; Haixin Chang; Shahid Atiq
Ceramics International, Volume 48, Issue 19, Part A, 1 October 2022, Pages 27560-27567
- **Hybrid nanocomposites for organic light-emitting diodes**
N. Bano; I. Hussain; Eman.A. Alghamdi; Rawabi S. Almushhin
Results in Optics, Volume 8, August 2022, 100258
- **Influence of γ -radiation on the physical characteristics of thermally evaporated nanostructured CdS: Cl films**
Amanullah Fatehmulla; Salman A. Almawash; Abdullah A. Albassam; Abdullah M. Aldhafiri; Eman A. Alghamdi; Shahid M. Ramay; Mohammad Asif
Journal of King Saud University - Science, Volume 34, Issue 6, August 2022, 102200
- **Crystal Growth of RuS₂ Using a Chemical Vapor Transport Technique and Its Properties**
Refka Sai; Ouri Gorochoy; Eman A. Alghamdi; Hatem Ezzaouia
Crystals 2022, 12(7), 994
- **Terrestrial snail-mucus mediated green synthesis of silver nanoparticles and in vitro investigations on their antimicrobial and anticancer activities**
Pramod C. Mane; Shabnam A. R. Sayyed; Deepali D. Kadam; Manish D. Shinde; Amanullah Fatehmulla; Abdullah M. Aldhafiri; Eman A. Alghamdi; Dinesh P. Amalnerkar; Ravindra D. Chaudhari
Scientific Reports volume 11, Article number: 13068 (2021)
- **Quantitative analysis of electrically active defects in Au/AlGaIn/GaN HEMTs structure using capacitance–frequency and DLTS measurements**
Nargis Bano; Ijaz Hussain; Eman A. Al-Ghamdi; M. Saeed Ahmad
Journal of Physics Communications, Volume 5, Number 12
- **Effect of chlorobenzene on the optical and structural properties of CH₃NH₃PbI₃:DMF perovskite films**
A.M. El-naggar; M.M. Osman; Zein K. Heiba; Mohamed Bakr Mohamed; A.M. Kamal; A.M. Aldhafiri; Eman A. Alghamdi
Journal of Materials Research and Technology, Volume 14, September–October 2021, Pages 287-297
- **Optoelectronic properties of solar cell materials based on copper-zinc-tin-sulfide Cu₂ZnSn(SxTe1-x)₄ alloys for photovoltaic device applications**
Z. Hussein; A. Laref; H.R. Alqahtani; Eman.A. Alghamdi; Mohammed El Amine Monir; N.A. Noor; H.M. Huang; Y.C. Xiong; J.T. Yang et al.
Solar Energy, Volume 225, 1 September 2021, Pages 851-862
- **Synthesis and characterization of spinel ferrites for microwave devices**
Rabia Qindeel; Norah H. Alonizan; Eman A. Alghamdi; Manal A. Awad
Journal of Sol-Gel Science and Technology, Volume 97, pages 593–599, (2021)

- **Monitoring the photocatalytic oxidation of water-based organic pollutants by FT-IR spectroscopy in real-time**

Jessica Mabin; Eman Alghamdi; Chris Hodges; Simon J. Freakley; Stephen A. Lynch

2016 41st International Conference on Infrared, Millimeter, and Terahertz waves (IRMMW-THz)